Modern Concepts of Cardiovascular Disease

Published monthly by the AMERICAN HEART ASSOCIATION

450 SEVENTH AVENUE, NEW YORK, N. Y.

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Vol. II **July, 1933** **No. 7**

NEUROCIRCULATORY ASTHENIA

"Neurocirculatory Asthenia" is the term commonly used in the United States to describe a syndrome to which many names have been applied. This syndrome was first clearly recognized during the American Civil War and was described by da Costa as the "excitable" or "irritable heart of soldiers." Rediscovered during the World War, it was successively called the "soldier's heart", "disordered action of the heart", and "effort syndrome." In this country "cardiac neurosis", "functional heart disease" (a contradiction in terms) and "neurocirculatory asthenia" have become more common. Some have restricted the use of the latter term to mean one type only of the cardiac neuroses. Here it will be used in the more inclusive sense. Descriptions of the syndrome under these various titles have varied chiefly in emphasis of certain features, this emphasis usually being dependent upon the writer's conception of the etiology and mechanism of symptoms. All have depicted so variable a picture that Lewis considers it possible that several distinct but similar syndromes are being confused. Hence definition is difficult. Based upon the factors common to all types of cases, it may be defined as a syndrome presenting symptoms usually the result of heart disease in a person in whom no organic heart disease can be demonstrated. But since some of the symptoms ordinarily ascribed to heart disease may occur in a normal person from excessive exertion or excitement, this definition should be modified by the statement that in neurocirculatory asthenia such symptoms occur under circumstances that do not usually produce them in a normal person.

Frequency: Since the dividing line between normal and abnormal reaction to exertion and nervous influences is indefinite, and since many cases are classified under such diagnoses as "neurasthenia", post-infectious debility, etc., the frequency of the syndrome is difficult to estimate. Among 3000 persons complaining of heart symptoms or signs, White and Jones found neurocirculatory asthenia alone in 10% and complicating organic heart disease in an additional 2%. In the writer's series of 1000 cases it occurred alone in 9.6% and combined in 2.7%.

Etiology: Neurocirculatory asthenia is more common in males than in females. Young adults are most frequently affected. It occurs in children, especially through suggestion from a physician or an over-anxious parent. Of the series of White and Jones 15.3% were over 50 years of age; in this age-group where physical signs in organic heart diseases may be slight, diagnosis of neurocirculatory asthenia should be made with caution.

While it is common in war-time soldiers, it is not uncommon in civilian life; occupation does not appear to be an important factor.

The etiology of the syndrome is poorly understood but if all types of cases are considered together, the important etiologic factors can be classified advantageously into three groups: psychic or nervous, constitutional, and physical. According to the presence or predominance and combinations of one or more of these etiologic factors, the clinical picture will vary.

1. Constitutional: Many of these patients will present clear evidence of constitutional inferiority —mental, physical, or both. Many are of the thin, undersized visceroptotic types with long narrow chests. Vasomotor instability is frequent. Many give a history of inadequacy to adjust themselves to their environment and to meet emotional crises. Often a hereditary family trend in the same direction may be elicited. James notes its occurrence among persons with inferior mentality giving a family history of epilepsy or insanity; the writer has not found it common in this latter type.

Especially in persons with such constitutional make-up the various psychic or physical causes operate to produce neurocirculatory asthenia. But many patients have an apparently normal hereditary and constitutional make-up.

2. Psychic or Nervous Factor: Worry over business, social or family affairs, emotional conflicts, fear, excitement, and prolonged nervous strain serve in many cases to cause or precipitate the syndrome. Occasionally one sees a simple anxiety neurosis centered upon the heart, suggested to the patient by the failure of a physician to interpret a murmur as functional or by the death from heart disease of a relative. There are cases where the heart symptoms are a substitution for an apparently insolvable emotional conflict. In others, the cardiovascular symptoms are but a major or minor part of a neurasthenia. The tendency to omit description of such psychiatric cases from discussions of neurocirculatory asthenia limits appreciа-

tion of the importance in many cases of the syndrome of the psychic factor.

3. Physical Factors: The etiologic physical factors are fatigue and infection. Neurocirculatory asthenia frequently develops after prolonged physical strain and especially if this is associated with lack of relaxation or insomnia. It may occur during convalescence from such acute illnesses as pneumonia, typhoid, and influenza, or during pregnancy. In some cases chronic focal infections in teeth, tonsils, sinuses, intestines or urinary tract may be important factors. Neurocirculatory asthenia may complicate organic heart disease through fear of the latter. Alcohol, tea, coffee and tobacco are considered aggravating rather than causative agents.

A combination of constitutional, psychic and physical factors seems to induce the most aggravated cases.

Symptoms: Symptoms referable to the heart are palpitation, precordial pain, and somewhat less frequently, dyspnoea. These may occur separately or together and usually follow exertion considerably less than is necessary to produce such symptoms in the normal person. Excitement or other emotions may induce the symptoms without exertion. In the type of cases where psychogenic factors are the most important these symptoms appear to be entirely subjective; the circumstances inducing them may be illogical, slight but unpleasant exertion resulting in pronounced symptoms while marked but pleasant effort causes none. In such cases one symptom may be out of proportion to another.

In the type of case where physical factors predominate, the symptoms are a true "effort syndrome", logical in kind and production but excessive in degree.

In all types of case symptoms of vasomotor instability, dizziness, fainting, sweating, and cold extremeties are common—five to ten times as common as in rheumatic valvular heart disease.

Nervous symptoms such as tremor, nervousness and paraesthesia are common. In all types but especially in the neurasthenic type, symptoms referable to other organs but without obvious cause are many times more frequent than in rheumatic valvular heart disease.

Signs: In neurocirculatory asthenia, physical examination may show no abnormal signs referable to the circulatory system, or may show moderate tachycardia and excessive response of pulse and blood pressure to effort. Functional cardiac or cardiorespiratory murmurs may be present. Arhythmia is not common; electrocardiography and X-ray examination reveal no characteristic abnormalities, though there is a tendency for the latter to show the "small standing" type of heart. But the examination is likely to reveal the inferior constitutional type and all the phenomena of vasomotor instability. The facial expression may be anxious or fearful.

Differential Diagnosis: Early and accurate diagnosis of neurocirculatory asthenia is of great importance. To falsely label such cases as organic heart disease increases the intensity of the symptoms and retards or even precludes the possibility of later cure. On the other hand, failure to recognize the psychic factor in some of these cases may permit unfavorable mental states to become fixed and productive of new symptoms. Neurocirculatory asthenia comprises a series of types of case that at one end emerge gradually into the psychoneuroses and at the other end (in the cases where infection is a prominent etiologic factor) into organic, so-called "toxic heart disease." At this latter end of the series the symptomatology and the presence of an acute or chronic infection lead one to question whether there may not be organic myocardial change undetectable by our methods of examination.

The differential diagnosis excludes organic heart disease upon the basis of negative physical findings. Hyperthyroidism and tuberculosis must be excluded by the appropriate examinations.

Course and Prognosis: Lewis and Grant have shown that the condition does not modify the length of life and that except for tuberculosis such cases are no more likely to develop heart or other organic disease than the general population. There may, however, be considerable disability, especially as the result of injudicious treatment. Such patients may become bed-ridden. The types most likely to get complete recovery are those where the condition follows an acute illness or where it is a pure anxiety neurosis. The type least likely to recover is that where the psychic element is most prominent—the neurasthenic.

Treatment: The first essential in treatment is so complete and careful an examination that the patient is (if possible) assured of the accuracy of the diagnosis. Electrocardiographic and X-ray examination may be indicated for this reason alone. This should be followed by careful and detailed explanation and reassurance. Upon the skill, tact, and sympathetic understanding of this, may depend the success or failure of treatment.

All sources of infection should be removed. The etiologic importance of stimulants such as tobacco and alcohol should be considered. Psychogenic factors should be sought and handled; in some cases this can be best done by the original physician—in others by a psychiatrist.

Finally the patient's physical and mental life should be ordered so as to fit as far as possible his capabilities. A reduction of physical and mental strain may be advisable, but rarely bed-rest. Graduated outdoor exercise is valuable. Drugs are to be avoided except sedatives and those directed to correcting secondary conditions such as anemia. If any drug is used it should be carefully explained that it is "not for the heart."

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